

Remarks

Objections

Drawing objections

Examiner objected to Figure 3 stating that the lead lines for some reference characters were not directed to the elements as they are described in the specification and also that Figure 3 appeared to be two separate figures and should be labeled as such. Both of these items have been corrected in the replacement drawing sheets submitted herewith. No new matter is added.

Examiner objected to Figure 4 stating that step 402 should read “redistribute erlangs”. This item has been corrected in the replacement drawing sheets submitted herewith. No new matter is added.

Examiner objected to Figure 5 because it included reference characters 506 and 508 not mentioned in the description. The description has been amended to include the reference characters. No new matter is added.

Disclosure objections

Examiner objected to various informalities in the disclosure. Applicant notes that:

The term Erlangs may be capitalized as is Applicant’s custom in accordance with industry practice.

Equations appearing on pages 18 and 19 of the specification are presented in accordance with industry practice.

Acronym “AHT” is spelled out on page 11 of the specification. “PCA” and “occ” are names of, or appear in names of, variables. “FMLA” and “FUTA” have been spelled out as suggested by Examiner.

References to Figures 6 and 7 have been corrected as suggested by the Examiner.

Applicants respectfully submit that the objections to the disclosure have been overcome, and earnestly request withdrawal of the objections.

Rejections

Claims 1 – 42 are pending in the application. Claims 1, 2, 16, 21 and 30 have been amended. No claims have been canceled. No claims have been allowed.

Rejections under 35 USC §101

Claims 1-15 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicants have amended claim 1 to recite a computer-implemented method for long-range planning. Applicants respectfully submit that the claimed invention is within the technological arts, and produces a useful, concrete and tangible result. Applicants submit that the invention of claims 1-15 is patentable under 35 U.S.C. § 101, and respectfully request withdrawal of the rejection.

Rejections under 35 USC §112

Claims 3 - 15 were rejected under 35 USC §112 as being indefinite for lack of antecedent basis. Applicants have amended claim 2 to provide the required antecedent basis. Applicants respectfully submit that the invention of claims 3 – 15 is patentable under 35 U.S.C. § 112, and respectfully request withdrawal of the rejection.

Rejections under 35 USC §102(b) (“public disclosure”)

Claims 1 – 6, 9, 10, 14 – 19, 22, 23, 27, 30 – 33, 36, 37, 41, and 42 were rejected under 35 USC §102(b) as being anticipated by Blue Pumpkin I – V (Internet Archive), a collection of 72 press releases, product reviews and other web pages.

Blue Pumpkin I – V documents pertain generally to a software product called “PrimeTime™” which is used to perform shift scheduling.

Applicants respectfully submit that the claims are not anticipated by Blue Pumpkin I – V (Internet Archive) and respectfully traverse the rejections under 35 USC §102(b).

Claim 1 as amended recites a computer-implemented method for long-range planning for a complex system, comprising defining at least one resource description, wherein a resource description comprises a group of resources that have similar characteristics, wherein the at least one resource includes resources not currently existing, and wherein defining comprises specifying the characteristics, including at least one capability and at least one performance measure.

Claim 1 further recites defining at least one work load and specifying at least one criteria to be satisfied by a long-range staffing plan.

Claim 1 further recites calculating an effect of applying the at least one resource description to the at least one work load while satisfying the at least one criteria, wherein the calculated effect includes at least one performance measure for the at least one work load, and an effective cost per hour.

None of the cited references teach or disclose such a method or its stated limitations. In contrast to the claimed invention, Blue Pumpkin I – V, to the extent that any method is taught at all, disclose scheduling existing resources to produce an employee schedule. This is teaching away from long-range planning including resource not yet in existence.

Blue Pumpkin I – V contains articles on Blue Pumpkin PrimeTime™ software, company press releases, product reviews, articles on call center workforce management, shift scheduling, and the like. Applicants note that PrimeTime™ software has no relation to long-range planning. Many of the articles in Blue Pumpkin I – V contain no disclosure or teaching on any method at all.

The Office Action states, in part:

“Blue Pumpkin I – V discloses ...

defining at least one resource description (I – V, call center personnel or agents)...

defining at least one work load (I, 5, p.6, staffing level demands)...

calculating an effect of applying the resource description to the work load including at least one performance measure and an effective cost per hour (I, 5, p.6, “patent pending algorithms” to minimize over or understaffing, try different scenarios).

Blue Pumpkin I, 5, p.6, is a description of how PrimeTime™ “constructs the actual staffing schedule.” “Call center personnel” are not a resource description; “staffing level demands” are not a work load. As for calculating an effect of applying the resource description to the work load, the cited reference states:

“PrimeTime™’s patent pending algorithms provide instantaneous results with minimal over or understaffing. *The generated schedule* can be easily adapted; for example, breaks can be adjusted by simply clicking and dragging them to a new time.” (emphasis added)

Applicants respectfully submit that generating a schedule has nothing to do with calculating the effect of applying a resource description to a work load. The cited passage does not teach the limitations of the claimed long-range planning method at all.

Claim 16

Claim 16 includes, among other limitations, a system that receives an employee profile definition, a queue definition and a criteria; and calculates the effect of staffing the queue with the employee profile while satisfying the criteria.

The claim does not read on the Blue Pumpkin I – V information since the claim elements are not found therein. Claims 17 – 19, 22, 23 and 27 depend, directly or indirectly from Claim 16, and are similarly not anticipated in Blue Pumpkin I – V.

Claim 30

Claim 30 includes, among other limitations, a medium containing computer instructions for generating a staffing plan by defining an employee profile, a queue and a criteria, and calculating the effect of staffing the queue with the employee profile while satisfying the criteria.

The claim does not read on the Blue Pumpkin I – V information since the claim elements are not found therein. Therefore Blue Pumpkin I – V is not evidence of a public use or on sale bar. Claims 31, 32, 36, 37, 41 and 42 depend, directly or indirectly from Claim 30, and are similarly not anticipated in Blue Pumpkin I – V.

Rejections under 35 USC §102(b) (on sale)

Examiner rejected claims 1 – 6, 9, 10, 14 – 19, 22, 23, 27, 30 – 33, 36, 37, 41, and 42 as being drawn to an invention on sale for more than one year prior to the date of application for patent.

Applicants respectfully request that the remarks above with reference to the rejections under 35 USC §102(b) citing Blue Pumpkin I – V as a public disclosure of the invention be applied here also. Blue Pumpkin I – V simply does not disclose the claimed invention.

Applicants further submit herewith the Affidavit of Illah Nourbakhsh under 37 CFR § 1.132 to overcome the rejection under 35 USC §102(b) for being on sale more than one year prior to the date of this application.

In view of the remarks and the Affidavit, Applicants respectfully submit that the rejections under 35 USC §102(b) have been overcome, and withdrawal of these rejections is earnestly solicited.

Rejections under 35 USC §103(a)

Examiner rejected claims 7, 8, 11 – 13, 20, 21, 24 – 26, 34, 35, and 38 – 40 as being unpatentable over Blue Pumpkin I – V references.

Applicant respectfully traverses the rejection for at least the following reasons. The cited references teach away from the claimed invention by teaching or suggesting only the concept of scheduling existing employees for shifts in the near future. Therefore, one of ordinary skill would find no motivation in the references to use the references in any way to arrive at the claimed invention. To the extent that the references provide any teaching at all, they are not enabling so as to provide one of ordinary skill with the information necessary to practice the method suggested. In addition, each of these claims depends from claim 1, 16 or 30 and therefore includes limitations thereon.

Rejections under 35 USC §103(a)

Examiner rejected claims 28 and 29 as being unpatentable over Blue Pumpkin I – V references in view of MPP (Massively Parallel Processing).

Applicant respectfully traverses the rejection for at least the following reasons. The cited references teach away from the claimed invention by teaching or suggesting only the concept of scheduling existing employees for shifts in the near future. Therefore, one of ordinary skill would find no motivation in the references to use the references in any way to arrive at the claimed invention. To the extent that the references provide any teaching at all, they are not enabling so as to provide one of ordinary skill with the information necessary to practice the method suggested. In addition, Claims 28 and 29 depend from claim 16 and therefore include the limitations thereon.

Requirement for Information

Examiner requires Applicant and assignee to provide information under 37 CFR 1.105. Applicant respectfully submits that the requirement is improper and requests that it be withdrawn for at least the following reasons:

- a. Examiner does not state why the requirement has been made and how the information is necessary to the examination. MPEP 704.14(a)
- b. The benefit from the information does not exceed[s] the burden in obtaining [the] information. MPEP 704.14
- c. There is no reasonable basis for the information required that would aid in the examination of [the] application. A requirement for information under 37 CFR 1.105 places a substantial burden on the Applicant that is to be minimized by clearly focusing the reason for the requirement and the scope of the expected response. Thus, the scope of the requirement should be narrowly defined, and a requirement under 37 CFR 1.105 may only be made when the examiner has a reasonable basis for requiring information. MPEP 704.11

Despite Applicants' belief that the requirement is improper, as complete a reply to the requirement as it is possible to make is contained herein. Numbering of Applicants' response to each item corresponds to that of the requirement:

1a and 1b. The PrimeTime™ v. 1.3 user's guide is included herewith as EXHIBIT 1.

2. Applicants co-authored the following publication that describes the disclosed subject matter of workforce management, scheduling, forecasting, and planning, and the related costing, benefit, and shrinkage techniques. A copy is included herewith as EXHIBIT 2.

"Staff Scheduling for Inbound Call Centers," Alex Fukunaga, Edward Hamilton, David Andre, Ofer Matan, Jason Fama, Illah Nourbakhsh, *Proceedings, IAAI 2002*.

This publication also appeared in: *AI Magazine*, 23(4), Winter 2002.

3. Applicants developed long-range planning algorithms without reference to publications.

4. Applicants drafted the claimed subject matter without reference to publications.

5. Planner from Blue Pumpkin (now sold by Witness Systems) is a product that incorporates the claimed subject matter. A user guide titled "Workforce Optimization Suite: Strategic Planning Guide" Release 7.6, September 2005 is included herewith as EXHIBIT 3.

6. The claimed invention performs long-range planning tasks while PrimeTime™ is a scheduler. The algorithm of the claimed invention and the algorithm of PrimeTime™ are non-overlapping — neither one can be used to do the job of the other product.

Before the claimed invention, there was no working system for performing long-range planning in skills-based environments. The claimed invention takes a broad set of inputs, while avoiding details like employee-specific data and ACD-specific data; yet it includes a quality assessment algorithm that, even for intricately interlinked multi-skilled employees, allows one to estimate the quality of service rendered by each of many queues over very long periods of months and even years.

Before the claimed invention it was not possible to do long-range planning in a multi-skilled call center operations environment with reasonable fidelity. Conventional approaches included simply sampling; i.e. running fine-grained simulators for a few time periods and extrapolating from that.

PrimeTime™ requires a database of agents and schedules their shifts. The claimed invention takes full-time-equivalents of multi-skilled work and figures out quality of service on all skills without ever needing actual shift timing or actual agent information. Also, the claimed invention takes as input such things as shrinkage, and breakdowns of such values. PrimeTime™ has no generic inputs of shrinkage for overall work done, or the breakdowns that the claimed invention has.

The claimed invention uses a feed-forward algorithm that, without any simulator at all, enables months and even years of schedule quality prediction with great speed. PrimeTime™ is a weekly, fine-grained (15 minutes at a time) scheduler that, for skills, uses a simulator and has a very different level of granularity.

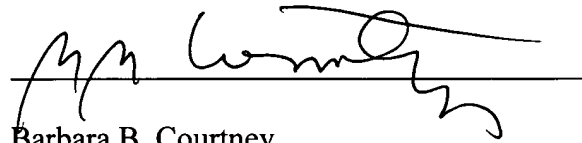
Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1 – 42 are in condition for allowance. The allowance of the claims is earnestly requested. The Examiner is invited to call the undersigned if there are any issues that remain to be resolved prior to allowance of the claims.

Respectfully submitted,

Courtney, Staniford & Gregory, LLP

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A handwritten signature in black ink, appearing to read 'Barbara B. Courtney', is written over a horizontal line.

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IN THE DRAWINGS

Please replace Figure 3 with Figures 3A and 3B attached herewith. As suggested by the Examiner, lead lines for reference characters 304, 306 and 310 have been directed to the elements as they are described in the specification, and Figure 3 has been relabeled as two separate figures 3A and 3B.

Please replace Figure 4 with Figure 4 attached herewith. The word “erlangs” has been corrected as suggested by the Examiner.

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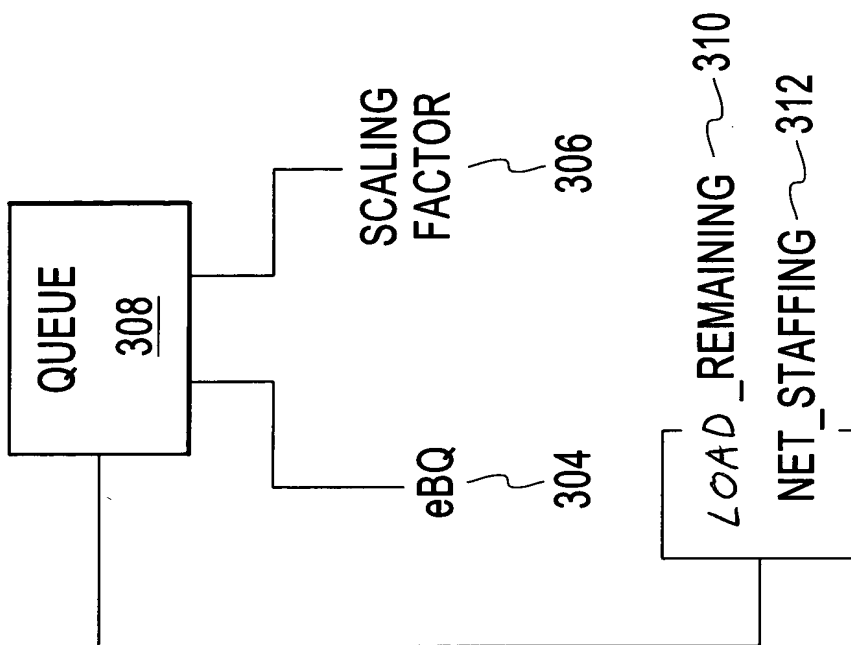


Fig. 3B

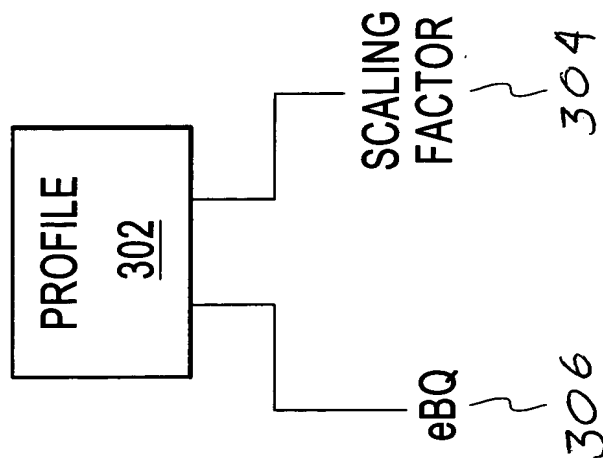


Fig. 3A

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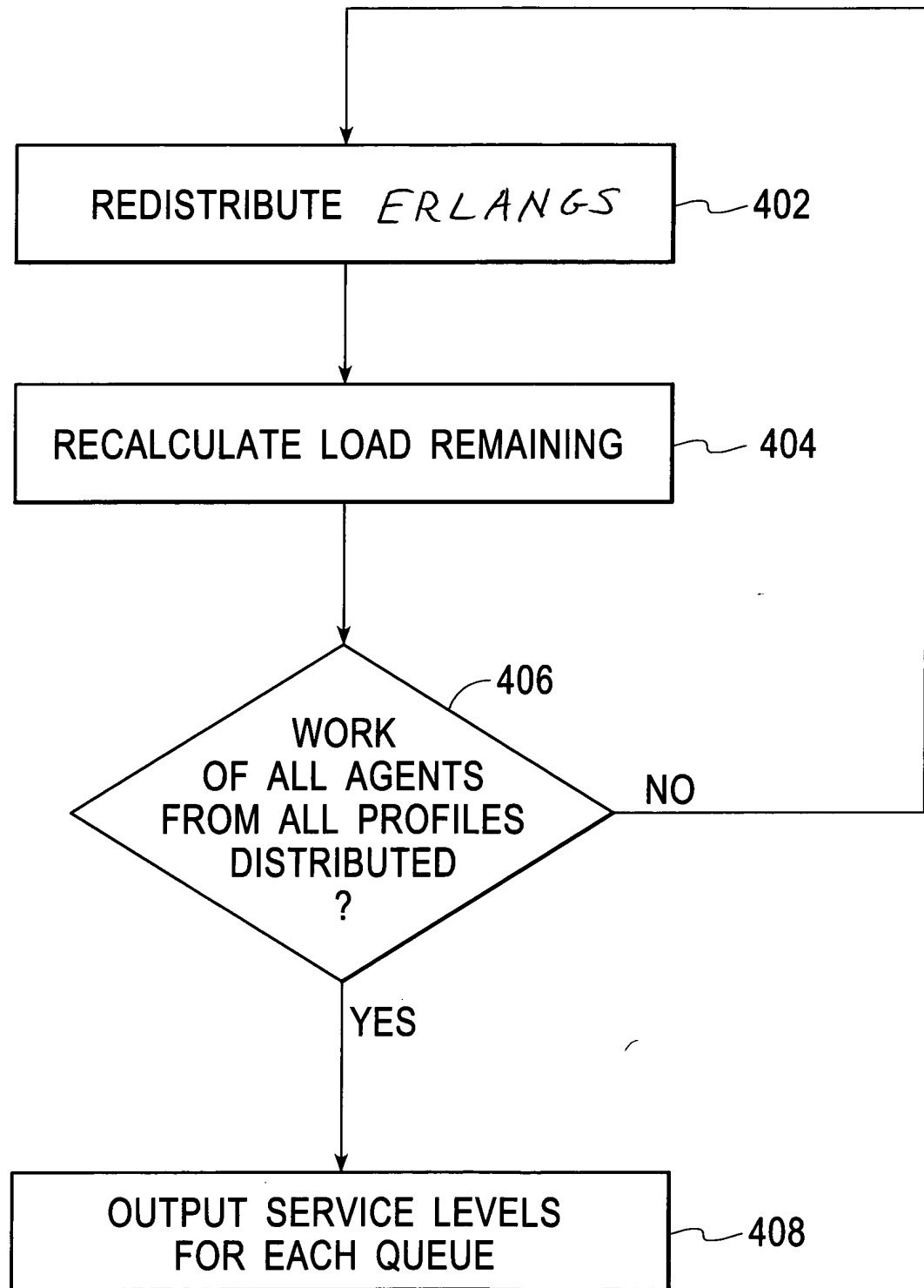


Fig. 4